Claims

[c1] 1. An image compensation method, comprising the steps of:
providing a light source;
providing a carrier having a plurality of grooves and a plurality of reflecting elements, wherein the grooves are on the surface of the carrier and the reflecting elements are attached to the surfaces of the carrier inside the grooves, the light source is enclosed within one of the grooves, and each reflecting element reflects light from the light source to produce a beam of light having a unique color;
moving either the carrier or the light source so that the light source is displaced from the groove;
rotating the carrier so that the one of the groove openings aligns with the light source;
moving either the carrier or the light source so that the light source is back into another groove.

[c2] 2. The method of claim 1, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color red.

[c3] 3. The method of claim 1, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color blue.

[c4] 4. The method of claim 1, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color green.

[c5] 5. The method of claim 1, wherein the light source is a daylight lamp.

[c6] 6. The method of claim 1, wherein at least one of the reflecting elements has a reflecting region such that width at both ends of the reflecting region is greater than the width in the middle.

[c7] 7. The method of claim 1, wherein at least one of the reflecting elements has multiple sections.

[c8] 8. The method of claim 7, wherein at least one of the reflecting elements is divided into a plurality of regions and at least one of the regions is painted in a

single color, a mix of two colors or a mix of multiple colors.

[c9] 9. The method of claim 1, wherein at least one of the reflecting elements has an entire surface painted in a single color, a mix of two colors or a mix of multiple colors.

[c10] 10. An image compensation method for illuminating a document with light having a suitable color content, comprising the steps of:
providing a plurality of light sources;
providing a carrier having a plurality of grooves and a plurality of reflecting elements, wherein the grooves are on the surface of the carrier and the reflecting elements are attached to the surface of the carrier inside the grooves, the light sources are enclosed inside the respective grooves, each reflecting element reflects light from a corresponding light source to produce a reflected light having a unique color; and
rotating the carrier so that one of the light sources illuminates the document.

[c11] 11. The method of claim 10, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color red.

[c12] 12. The method of claim 10, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color blue.

[c13] 13. The method of claim 10, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color green.

[c14] 14. The method of claim 10, wherein the light source is a daylight lamp.

[c15] 15. The method of claim 10, wherein at least one of the reflecting elements has a reflecting region such that width at both ends of the reflecting region is greater than the width in the middle.

[c16] 16. The method of claim 10, wherein at least one of the reflecting elements has multiple sections.

[c17] 17. The method of claim 16, wherein at least one of the reflecting elements is divided into a plurality of regions and at least one of the regions is painted in a

single color, a mix of two colors or a mix of multiple colors.

[c18] 18. The method of claim 10, wherein at least one of the reflecting elements has an entire surface painted in a single color, a mix of two colors or a mix of multiple colors.

[c19] 19. An image compensation method, comprising the steps of:
providing at least a light source;
providing a plurality of reflecting elements, wherein each reflecting element is able to reflect light from the light source and each reflecting element reflects back a beam of light having a unique color; and
moving the reflecting elements so that one of the reflecting elements is in a position to reflect the light coming from the light source.

[c20] 20. The method of claim 19, wherein a plurality of light sources are also provided so that each reflecting element reflects light coming from one of the light sources, the light sources move in correspondence to the reflecting elements, and only one of the light sources is powered up to illuminate a corresponding reflecting element and produce a reflected beam.

[c21] 21. The method of claim 19, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color red.

[c22] 22. The method of claim 19, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color blue.

[c23] 23. The method of claim 19, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color green.

[c24] 24. The method of claim 19, wherein the light source is a daylight lamp.

[c25] 25. The method of claim 19, wherein light from the light source and reflected light from one of the reflecting elements both project to a scanning location, the reflecting elements rest on a supporting frame and the light source, the supporting frame and the scanning location are positioned to form a triangular configuration.

[c26] 26. The method of claim 19, wherein light from the light source and reflected light from one of the reflecting elements both project to a scanning location and one of the reflecting elements, the light source and the scanning location form a straight line configuration with the light source positioned between the reflecting elements and the scanning location.

[c27] 27. The method of claim 19, wherein at least one of the reflecting elements has a reflecting region such that width at the both ends of the reflecting region is greater than the width in the middle.

[c28] 28. The method of claim 19, wherein at least one of the reflecting elements has multiple sections.

[c29] 29. The method of claim 28, wherein at least one of the reflecting elements is divided into a plurality of regions and at least one of the regions is painted in a single color, a mix of two colors or a mix of multiple colors.

[c30] 30. The method of claim 19, wherein at least one of the reflecting elements has an entire surface painted in a single color, a mix of two colors or a mix of multiple colors.

[c31] 31. A carrier having a groove and a reflecting element thereon, wherein the groove is on the carrier and the reflecting element is attached to the interior surface of the groove such that the reflecting element reflects a beam of light having a color biased towards the color red, green or blue.

[c32] 32. The carrier of claim 31, wherein the reflecting element has a reflecting region such that the width near the ends of the reflecting region is greater than the width in the middle of the reflecting region.

[c33] 33. The carrier of claim 31, wherein the reflecting element is a multiple section element.

[c34] 34. The carrier of claim 33, wherein the reflecting element is divided into a plurality of regions and at least one of the reflecting regions is painted in a single color, a mix of two colors or a mix of multiple colors.

[c35] 35. The carrier of claim 31, wherein the reflecting element is painted in a single color, a mix of two colors and a mix of multiple colors.

[c36] 36. An image compensation structure for a scanner, comprising:
a light source; and
a reflecting element, wherein the reflecting element is able to reflect light from the light source to produce a beam of light having a unique color.

[c37] 37. The structure of claim 36, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color red.

[c38] 38. The structure of claim 36, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color blue.

[c39] 39. The structure of claim 36, wherein the light reflected from the reflecting element when illuminated by the light source is biased towards the color green.

[c40] 40. The structure of claim 36, wherein the light source is a daylight lamp.

[c41] 41. The structure of claim 36, wherein light from the light source and reflected light from one of the reflecting elements both project to a scanning location, the reflecting elements rest on a supporting frame and that the light source, the supporting frame and the scanning location are positioned to form a triangular configuration.

[c42] 42. The structure of claim 36, wherein light from the light source and reflected light from one of the reflecting elements both project to a scanning location and that one of the reflecting elements, the light source and the scanning location form a straight line configuration with the light source positioned between the reflecting elements and the scanning location.

[c43] 43. The structure of claim 36, wherein the reflecting elements have a reflecting region such that width at the both ends of the reflecting region is greater than the width in the middle.

[c44] 44. The structure of claim 36, wherein the reflecting elements have multiple sections.

[c45] 45. The structure of claim 44, wherein the reflecting elements are divided into a plurality of regions and at least one of the reflecting regions is painted in a single color, a mix of two colors or a mix of multiple colors.

[c46] 46. The structure of claim 36, wherein the reflecting elements are painted in a single color, a mix of two colors and a mix of multiple colors.

[c47] 47. An image compensation method, comprising the steps of:
using an optical sensor chip to obtain a response graph of the color content of the three primary colors within a target light source and hence voltage values of the three primary colors within a given region of the optical sensor chip;
using the response graph of the three primary colors to decide the color content of a compensating light beam and utilizing the voltage difference between the three primary colors to produce a compensating beam with a suitable strength; and
positioning a reflecting element close to the light source so that light reflected from the reflecting element has a color content identical to the required compensating beam and strength of the beam reflected from the reflecting element is identical to the strength of the required compensating beam.

[c48] 48. The method of claim 47, wherein the compensating light beam reflected from the reflecting element when illuminated by the light source is biased towards the color red.

[c49] 49. The method of claim 47, wherein the compensating light beam reflected from the reflecting element when illuminated by the light source is biased towards the color blue.

[c50] 50. The method of claim 47, wherein the compensating light beam reflected from the reflecting element when illuminated by the light source is biased towards the color green.

[c51] 51. The method of claim 47, wherein the light source is a daylight lamp.

[c52] 52. The method of claim 47, wherein the reflecting elements have a reflecting region such that width at the both ends of the reflecting region is greater than

the width in the middle.

[c53] 53. The method of claim 47, wherein the reflecting elements have multiple sections.

[c54] 54. The method of claim 53, wherein the reflecting elements are divided into a plurality of regions and at least one of the regions is painted in a single color, a mix of two colors or a mix of multiple colors.

[c55] 55. The method of claim 47, wherein at least one of the reflecting elements has an entire surface painted in a single color, a mix of two colors or a mix of multiple colors.

[c56] 56. The method of claim 47, wherein light from the light source and reflected light from the reflecting element both converge to a scanning location and that the light source, the supporting frame and the scanning location are positioned to form a triangular configuration.

[c57] 57. The method of claim 47, wherein light from the light source and reflected light from one of the reflecting elements both converge to a scanning location and that the reflecting elements, the light source and the scanning location form a straight line configuration with the light source positioned between the reflecting elements and the scanning location.